Equipments & Materials Processing

ION Technologies (Bridgwater, UK) has launched a Compact version of its Gemini Mark 2 Liquid Scrubbing System (for the treatment of hazardous, toxic and pyrophoric gases), designed for greater cost effectiveness in low-volume wafer production by users running just one or two reactors. The Gemini Compact handles up to 2 litres per minute of hydride gases and is available in two models: partially automated (with automatic dosing only) or fully automated (with automatic draining and water fill as well).

Bede doubles sales in a year

For x-ray metrology tool supplier **Bede plc** (Durham, UK) first-half 2001 sales were £3.1m (up 118% on first-half 2000) from shipments of 29 instruments (up from 13). Orders were £3.1m (up 85%).

The new 27,000 ft^2 leased facility for Bede Scientific Instruments Ltd's operations and Bede plc head office should be occupied in November.

In July Bede Scientific Inc (Denver, CO, USA) relocated to a new, larger facility with expanded sales demonstration and service support areas.

New agents have been appointed in Singapore and France. To increase focus on the ASEAN market, an office in Shanghai was opened and a manager appointed for the new Bede-Asia operation.

Since flotation last November (see Issue 1, page 16), staffing has risen by 29 to 84 (including senior management in Q2).

Implementation of a fully integrated computerised business information system should be completed by mid-2002.

Veeco acquires Applied Epi for MBE of compounds

Veeco Instruments Inc (Woodbury, NY, USA) has acquired privately-held **Applied Epi Inc** (St Paul, MN, USA) in exchange for about 4m Veeco shares and US$30m in cash (totalling about US$132m).

Applied Epi was founded in 1986 to supply initially MBE deposition material sources and then also systems. The systems include:

- the GEN II and GEN III (claiming the leading market share for pilot production and research MBE systems);
- the silicon-style multi-wafer 4x4" GEN200 and 7x6" GEN2000 production systems (the first MBE cluster tools, the latter being the world's largest capacity production MBE system).

Applied Epi has an installed base of more than 5000 deposition cells and 200 research/production systems. Sales last year were US$25m and the 2001 forecast is about US$50m. Applied Epi says that it has a diverse customer base, with no single customer accounting for more than 10% of sales in 1998, 1999 or 2000.

Veeco chairman, president and CEO Edward H Braun says that the merger adds a "critical high-value deposition product line" (MBE) to its current line of process equipment.
He adds, "We will be well positioned to play a leading role in the future integration of III-V compound semiconductor and silicon device development. This important addition to our breadth of technologies will allow us to extend our customer base for optoelectronic telecommunications and wireless growth opportunities."

Applied Epi president and CEO David G Reamer commented, "Veeco brings the worldwide sales and service support and financial resources we need to serve our expanding customer base...our technology fits in perfectly with Veeco's 'one-stop shopping' process equipment and metrology strategy".

Applied Epi says that its founder, Paul Colombo (now a major shareholder in Veeco), will continue in his role of providing the technical vision for Applied Epi's epitaxial equipment. Dave Reamer continues as president.

Applied Epi will also now have extra resources for its development of compound-on-silicon technology (it was an Applied Epi MBE system that Motorola used in its recent GaAs-on-Si development - see page 34) as well as its stated intention to develop MOCVD technology.

Also, in mid-September Applied Epi shipped a dual-reactor GEN2000 system to epiwafer foundry IQE (Cardiff, Wales, UK).

* Applied Epi has sold a GEN200 system to "a leading silicon chip manufacturer" for the growth of novel memory devices requiring the integration of MBE growth technologies with silicon manufacturing techniques.

"Many industry leaders say production MBE must adopt silicon models to profitably boost throughput and increase system uptime," said Reamer. "These tools best enable semiconductor fabs to grow next-generation devices, plus they feature a familiar and flexible silicon architecture."

* In July Veeco acquired Thermo Electron Corp subsidiary **ThermoMicroscopes** (Sunnyvale, CA, USA), which makes Atomic Force Microscopes, Scanning Probe Microscopes, Near Field Optical Microscopes and probes. Its year-2000 sales were about US$14m. It will now be called **TM Microscopes** and become part of the Veeco Metrology Group (headed by president Don Kania PhD).

Braun said "This purchase broadens our AFM product line, adds proprietary tip technology, and allows us to offer a versatile research microscope product line ideal for a variety of material science and nanoscience applications."

* Veeco's Q2/2001 sales were US$113.5m (up 11% on Q2/2000 but down 11% on Q1/2001):
- Process Equipment US$73.2m and Metrology US$38.9m.
- optical telecommunications 32%, data storage 33% and semiconductor/research 35%.

Bookings were US$81.5m:
- Process Equipment US$40.1m and Metrology US$40.2m;
- 16% optical telecommunications, 36% data storage and 48% semiconductor/research.

Cancellations were about 7% of backlog (mainly optical telecoms). Veeco has cut 130 jobs (8% of its workforce).

Braun said that, while optical telecoms is currently the weakest market, it has broadened its product line to include metrology and process equipment for fabrication of active devices in addition to thin film filters.

Veeco expects Q3 sales of US$100-110m and bookings of US$70-80m.